



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D5304-1
Job Sheet 167204



Part No: D5304-1

Job Qty: 16 ea

Part Name: Crossbolt Spacer



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 10/26/17

Job Tracking No:

Due Date: 12/4/17

Created By: Victoria Michaud-Febrille

Type: SOLD

Description:

Note: SALES ORDER 658

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	16 Ea		12/2/17	0.00	0.00	Start Up Machining		
100	Hardinge	16 pcs		12/2/17	0.00	1.17	Hardinge		
120	QC	16 pcs		12/2/17	0.00	0.00	QC8		
130	Outsource	16 pcs		12/2/17	0.00	0.00	Outsource1		
140	Packaging	16 pcs		12/2/17	0.00	0.00	Packaging2		
150	QC	16 pcs		12/2/17	0.00	0.00	QC6		
160	HandFinish	16 pcs		12/4/17	0.00	0.16	HandFinish1		
170	QC	16 pcs		12/4/17	0.00	0.00	QC7		
190	Packaging	16 pcs		12/4/17	0.00	0.00	Packaging3		
200	QC21-SA	16 Ea		12/4/17	0.00	0.00	QC21		

Part Op 100 - 1- Machine as per Folio FB

Descriptions: 130 - ***HEAT TREAT AS PER DWG D4202***

160 - WASH SPACER AS PER QSI005

190 - ***STOCK IN SKIDTUBE CELL***

DAS
13
9-89

NOV 22 2017

DAS
21
9-89

FEB 02 2018

ISSUE R/D to Metcore: 38984 Heat treat to T4/T42 condition/UTS=30KSI

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	M6061T6T0.750W.125	7	26	0	0

Part Specifications

Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Crossbolt Spacer	5.200Inches $\pm$ 0.010	5.210 5.190		
2	Crossbolt Spacer	0.750Inches + 0.008 - 0.001	0.758 0.749	Diameter	
3	Crossbolt Spacer	0.125Inches $\pm$ 0.010	0.135 0.115		

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QS1042) Approval																																																	
Description Work Order Deviation			Disposition																																																		
 S007278 Crossbolt Spacer			Dart Aerospace Ltd. 1270 Aberdeen Street Hawkesbury, ON K64 1K7 CANADA TEL.: 1 613 632-5200 Email: sales@dartaero.com www.dartaerospace.com		Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____																																																
PART NO: D5304-1 Revision: Operation: Start up Operation Quantity: 24 Change No: Mfg Date: 11/07/17 Job No: 167204 <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Environment</td><td>☐</td></tr> <tr><td>Design</td><td>☐</td></tr> <tr><td>Doc/Data</td><td>☐</td></tr> <tr><td>Equip/Tooling</td><td>☐</td></tr> <tr><td>Handling/Pre</td><td>☐</td></tr> <tr><td>Material</td><td>☐</td></tr> <tr><td>Internal Transport</td><td>☐</td></tr> <tr><td>Tribal Knowledge</td><td>☐</td></tr> <tr><td>LOA</td><td>☐</td></tr> <tr><td>Substation</td><td>☐</td></tr> <tr><td>Past Expiry Date</td><td>☐</td></tr> <tr><td>Misidentified</td><td>☐</td></tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Crushing</td><td>☐</td></tr> <tr><td>Heat Treat</td><td>☐</td></tr> <tr><td>Wave/Twist in Tube</td><td>☐</td></tr> <tr><td>Marks/Chatter</td><td>☐</td></tr> <tr><td>Countersink</td><td>☐</td></tr> <tr><td>Cut Too Short</td><td>☐</td></tr> <tr><td>Instructions Incomplete/Unclear</td><td>☐</td></tr> <tr><td>Drill Holes</td><td>☐</td></tr> <tr><td>Off-set</td><td>☐</td></tr> <tr><td>Mislabeled</td><td>☐</td></tr> <tr><td>Fit/Function</td><td>☐</td></tr> <tr><td>Misaligned/off center</td><td>☐</td></tr> </table>						Environment	☐	Design	☐	Doc/Data	☐	Equip/Tooling	☐	Handling/Pre	☐	Material	☐	Internal Transport	☐	Tribal Knowledge	☐	LOA	☐	Substation	☐	Past Expiry Date	☐	Misidentified	☐	Crushing	☐	Heat Treat	☐	Wave/Twist in Tube	☐	Marks/Chatter	☐	Countersink	☐	Cut Too Short	☐	Instructions Incomplete/Unclear	☐	Drill Holes	☐	Off-set	☐	Mislabeled	☐	Fit/Function	☐	Misaligned/off center	☐
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Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038454

Supplier: MEI001-VC
Metcor Inc.
560 Boul. Arthur Sauve
Saint-Eustache
QC
J7R 5A8 Canada
Phone: 450 473 1884
Fax: 450 491 5498

PO No: PO038454
PO Date: 11/22/17
Due Date: 11/30/17
Purchase Order Revision:
Revision Date:
Ship-To Contact: Lavoie, Chantal
clavoie@dartaero.com

E-MAILED
NOV 27 2017

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pymt Terms: Net 30
Freight Terms:
Special Comments:

REVISED

Items

Line Item	Job	Part	Rev	Description	Item Tax	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Exter Pri
1	165558	646.9711	-	Blade PO to Metcor: FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL PLEASE NOTE: DETAIL C OF C REQUIRED		Firmed	11/30/17	25 pcs	0 pcs	25 pcs	\$2.86666/pcs	\$7
2	167185	D5504-1	-	Blade PO to Metcor: FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL PLEASE NOTE: DETAIL C OF C REQUIRED		Firmed	11/30/17	80 pcs	0 pcs	80 pcs	\$2.866666/pcs	\$2
3	168538	D5518-1	-	Crossbolt Spacer PO to Metcor: HEAT TREAT TO T4/T42 CONDITION MIN. UTS=30 KSI (60 HREW MIN) NOTE: DETAIL C OF C REQUIRED PART ARE MADE FROM 6061-T6 MATERIAL		Firmed	11/30/17	72 pcs	0 pcs	72 pcs	\$7.375/pcs	\$5
4	167204	D5304-1	-	Crossbolt Spacer 1--Issue P/O to Metcor; P/O HEAT TREAT TO T4/T42 CONDITION MIN. UTS=30 KSI (60 HREW MIN) NOTE: DETAIL C OF C		Firmed	11/30/17	16 pcs	0 pcs	16 pcs	\$7.375/pcs	\$1

25X

SPR-12-1

\$ 80X

17-12-4

DAG
3 38

Recy 16 24X
SPR-12

DART
AEROSPACE
S018583

Dart Aerospace Ltd.

1270 Aberdeen Street
Hawkesbury, ON K64 1K7
CANADA

TEL.: 1 613 632-5200

Email: sales@dartaero.com

www.dartaerospace.com



Crossbolt Spacer

PART NO: D5304 - 1

Revision:

Operation: Outsource

Change No:

Mfg Date: 12/07/17

Job No: 167204

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Reçu de livraison

Delivery Receipt

BON DE TRAVAIL Order	EXPÉDITEUR Shipper ID	BON D'EXPÉDITION Shipper
323569	1	124203

EXPÉDITION COMPLÈTE / Shipped Complete

CLIENT /Customer 215
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053



LIVRÉ À /Shipped To
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

COMMANDE DU CLIENT Customer PO	BON DE LIVRAISON DU CLIENT Customer Shipper No.	TYPE DE MATÉRIEL Material Type	DATE DE LA COMMANDE Order Date	TRANSPORTEUR Carrier
38454		AL-6061	2017/11/24	

QUANTITÉ Quantity	No. PIÈCE / Part No.	NOM DE LA PIÈCE / Part Name	DESCRIPTION DE LA PIÈCE Part Description	POIDS Weight
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88 D5518-1

(72) D5518-1

(16) D5304-1

1 BOITE DE CARTON

6,

SPR 12-7

DAS
38
9-89

TYPE DE CONTENEUR Container Type	# DE CONTENEURS # Of Containers	COMMENTAIRES CONTENEUR Container Comments
BOITE DE CARTON	1	

CERTIFICAT

EMPAQUETAGE Packing	
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QUANTITÉ EXPÉDIÉE / Quantity Shipped : 88

POIDS EXPÉDIÉ / Weight Shipped : 6,00

QUANTITÉ RESTANTE / Quantity Remaining : 0

POIDS RESTANT / Weight Remaining : 0,00

APPROUVÉ

CERTIFICAT

QUANTITÉ EXPÉDIÉE / Quantity Shipped : 88

POIDS EXPÉDIÉ / Weight Shipped : 6,00

Signature:

Date:

EXPÉDIÉ LE / Shipped On : 2017/12/05

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
323569	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K8A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K8A 1K7

1

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
38454	N/A	AL-6061		

SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

SOL ANNEAL

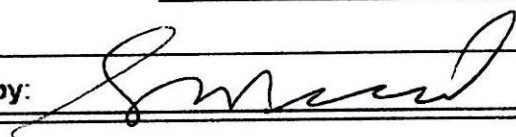
SINGLE AGING TO CONDITION T42

EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
CONDUCTIVITY	35 - 43 %IACS	20	38,5 - 41,5 %IACS
HARDNESS	80 HREW MIN	20	67,5 - 69,5 HREW
MESURE EN HR15TW = 66,5-67,5 HR15TW			

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
88	6	D5518-1 (72) D5518-1 (16) D5304-1 1 BOITE DE CARTON

COMMENTAIRES / comments

APPROUVÉ par / Approved by:



DATE: 2017-12-05

APPROUVÉ

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détail

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
323569	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
38454	N/A	AL-6061		
<u>SPÉCIFICATIONS DU PROCÉDÉ</u> processing specifications				
SOL ANNEAL SINGLE AGING TO CONDITION T42				
EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results	
CONDUCT	35 - 43 %IACS	20 (60 kHz)	38.5 - 41.5 %IACS	
HARDNESS	60 HREW MIN	20	67.5 - 69.5 HREW MESURE EN HR15TW = 66,5-67,5 HR15TW	
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description		
88	6	D5518-1 (72) D5518-1 JOB 168538 (16) D5304-1 JOB 167204 1 BOITE DE CARTON		

COMMENTAIRES / comments

SOL. ANNEAL 9856F, 50 MIN
AGE HARDEN AMBIANT, 96 HRS

Heat treatment (HT) was performed with equipment that meets the requirements of requested specification. All HT operations were performed in compliance with the required HT specification and all verifications have been performed and documented. No unauthorized changes were performed in regards to the HT. We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

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Le traitement thermique (TT) a été fait en utilisant des équipements en conformité avec la spécification demandée. Toutes les opérations de TT ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandés ont été faites et documentés. Aucun changement n'a été faite par rapport au TT. On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiées.

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
323569	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

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APPROUVÉ par / Approved by:

Isabel Otero

Isabel Otero

QA Technician



DATE: 2017-12-05